BIBLIOGRAPHICAL NOTICE.

Catalogue of the Lepidoptera Phalænæ in the British Museum. Volume I. (pp. xxi & 559) and Plates (i.–xvii.). *Catalogue of the* Syntomidæ *in the Collection of the British Museum.* By Sir George F. Hampson, Bart. London: printed by order of the Trustees. 1898. 8vo.

The Trustees of the British Museum are to be congratulated on their boldness in resolving to attempt a monumental work in entomology, on the Moths of the world—a group which, though very incompletely known or collected at present, probably numbers at least five or six times as many species as the whole of the Birds, the Museum Catalogue of which has just been completed in twenty-seven thick octavo volumes, exclusive of Supplement and Index. The Bird Catalogue is the work of eleven different authors, and the effort to describe a far larger group may well be beyond the powers of one entomologist; but Sir George Hampson is a young and energetic man, and, what is of even far greater importance, it is evident that he has very wisely been given a perfectly free hand, and every encouragement by the authorities of the Museum. Consequently he commences his arduous task under the most favourable auspices, and great things may be expected of him.

The plan of the work is similar in the main to the author's useful 'Moths of India,' from which many of the illustrations, especially those in the Introduction, are copied; but in one respect we notice a change for the better. The author is well known to be what is called, in entomological slang, "a lumper"; and in some cases many nominal species are sunk under one. In the present work an attempt has been made to show which names are regarded as absolute synonyms, and which represent actual variations of greater or less importance; and although we think this should have been done more fully, yet this feature marks a decided improvement on the 'Moths of India,' in which very few indications of this kind were given.

The Introduction to the present work commences with general information respecting Lepidoptera; and it is very convenient in a work of this kind to have careful diagrams of such features as wing-neuration always available for ready reference. We should almost be inclined to recommend that such diagrams should be reproduced in each volume.

Then follow remarks on the phylogeny of Lepidoptera, illustrated by tables, but expressed, as is frequently the case with writers who attempt to trace out schemes of evolution, which must, after all, be largely tentative and conjectural, in rather too dogmatic a manner for our taste.

In Geographical Distribution the author admits four principal zones, viz.:—Northern Temperate, the Tropical Zone of the Old World, the Neotropical, and, finally, the Australian Region.

A brief sketch is then given of the general scheme of the work, followed by a key to the families of Lepidoptera, of which the author now admits 52, 7 of which include butterflies; and these, though placed at the head of the table, are numbered from 33 to 39, their place being thus indicated between the Castniadæ and the Eucheemonidæ, an arrangement which will probably not be accepted by all entomologists. As the plan of the work is to begin with the most highly organized families and to work downwards, the present volume is devoted to the Syntomidæ, which the author now places as Fam. 1. This group was formerly regarded as a section of the Zygænidæ, between the true Zygænidæ and the Arctiadæ, which here form Fam. 2; but the Zygænidæ are now removed to a great distance, standing as Fam. 41. Then follow general observations on the Syntomidæ, a key to the genera, and a table showing their comparative affinities, and then the author plunges *in medias res*.

Before speaking of the work itself we may mention that it is introduced by a conventional preface by Sir William Flower, followed by a Systematic Index, the value of which would, however, we think, have been much increased for purposes of ready reference if the names of the authors had been appended to the species and genera, an improvement which we hope to see adopted in future volumes. There is also a general Alphabetical Index at the end of the book.

1184 species are described in the present volume, including many which are not in the British Museum, but of which authentic specimens have been examined by the author. It has wisely been decided, however, that no new species are to be described in the work, except those of which the British Museum actually possesses the types.

The descriptions are short, but will probably be sufficient for the identification of the species, especially as a large number are figured. We may, however, express a hope that too great uniformity of plan may not lead to too mechanical a method of work—an error into which all naturalists are liable to fall when they are required to describe a large number of species.

As the identification of species is one of the principal objects in a work of this description, it would be unfair to expect that much space could be given to metamorphoses or other detailed information. What a fairly complete account of individual species would really imply, entomologists will soon have an opportunity of learning from Mr. Tutt's forthcoming work on the British Zygænidæ—though even Mr. Tutt, so far as we know, deals chiefly, if not exclusively, only with synonymy, external characters and variation, range, habits, localities, metamorphoses, and food. A series of volumes would be required to contain all the attainable information relating to *almost any single species* of animal or plant, as every naturalist must be well aware.

The determination of species is much facilitated in the present work by elaborate tables, which are specially useful in the case of the larger genera, and by the numerous illustrations. Each genus,

and each of the more important sections of a genus at least, are illustrated in the text, while all species that have not been satisfactorily figured elsewhere, are, as far as possible, to be represented on the coloured plates. These are issued and sold separately—a great advantage for working entomologists, who frequently require more than one copy of a work of this description; and it would be too much to expect them to buy a duplicate set of coloured plates too. We regret that both the plain and coloured figures represent one side of the insect only; but this inartistic method was absolutely unavoidable without a very large (and, for scientific purposes, unnecessary) additional outlay of both space and money.

We hope Sir George Hampson may live to bring out many more volumes similar to the book now before us.

PROCEEDINGS OF LEARNED SOCIETIES.

GEOLOGICAL SOCIETY.

November 9th, 1898.—W. Whitaker, B.A., F.R.S., President, in the Chair.

The following communication was read:—

'On the Radiolaria in the Devonian Rocks of New South Wales.' By G. J. Hinde, Ph.D., F.R.S., F.G.S.

Hand-specimens of the various radiolarian rocks discovered by Messrs. David and Pittman in New South Wales were forwarded to the Author, and from them numerous microscopic sections were prepared. In the chert and jasper rocks of the Jenolan, Bingara, and Tamworth districts, the radiolaria were for the most part in the condition of casts filled with chalcedonic silica and without structure, so that their generic characters could not be determined. Also in the claystones, the radiolaria were but poorly shown in sections, though the structure could be seen in specimens weathered out naturally on the surface of the rock. But in the siliceous limestones and in the volcanic tuffs the radiolaria were embedded in, and infiltrated with calcite, and by careful etching of thin sections of the rock, the lime was eliminated and the organisms were shown very distinctly. The rock then appeared as a confused mass of entire and fragmentary radiolaria and minute débris of their spines and latticed tests. The silica of these forms is for the most part still in its colloid condition; in some, however, it has been replaced by a dark mineral.

Fifty-four species belonging to 29 genera have been determined and figured; all the species and four genera are regarded as new; excepting a few primitive types of Nassellaria, the forms belong to the Spumellaria. The large majority may be included in the